

REMARKS

Reconsideration and allowance of the above-identified Application in view of the above amendments and the following remarks are respectfully requested.

Claims 1-39 are pending in the Application, claims 21-39 having been added herewith. New claims 21-39 are fully supported by the original disclosure.

The Examiner indicated that the lengthy specification had not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant has amended the specification to correct all minor grammatical, clerical and/or idiomatic errors discovered.

The Examiner rejected claims 4, 5, 7-10, 12 and 13 under 35 U.S.C. § 112, first paragraph, as being single means claims. Applicant has thus amended claims 4, 5, 7-10, 12 and 13 such that none is now a single means claim. Therefore, Applicant respectfully submits that claims 4, 5, 7-10, 12 and 13 are now in condition for allowance and requests that the rejection under 35 U.S.C. § 112, first paragraph, be withdrawn.

The Examiner rejected claims 1-20 under 35 U.S.C. § 102(f) as being invented by another. In particular, the Examiner noted that U.S. published Patent Application US 2003/0117719 A1 has no common inventors with the current Application. Applicant respectfully traverses for at least the following reasons. The current Application was filed in the U.S. on September 21, 2001 based on Japanese priority documents filed December 21, 2000 and January 18, 2001. In contrast, the above-noted published U.S. patent Application was filed in the U.S. on September 13, 2002 based on Japanese priority documents filed September 17, 2001 and June 11, 2002. Since the filing dates of the current Application are all prior to the corresponding filing dates of the cited U.S. published Application, Applicant respectfully submits that the published U.S. patent Application does not constitute evidence that the inventor of the current Application derived his invention from the Applicants of the cited published U.S. Application. Furthermore, the above-noted U.S. published patent Application is not prior art under any of 35 U.S.C. § 102(a), 35 U.S.C. § 102(b), or U.S.C. § 102(e). Therefore, Applicant respectfully requests that the rejection of claims 1-20 under 35 U.S.C. § 102(f) be withdrawn.

The Examiner rejected claims 10, 11, 16 and 17 under 35 U.S.C. § 102(b) as being anticipated by Iwasaki (JP6-258502 A). Applicant respectfully traverses for at least the following reasons.

Applicant amended claim 10 as noted above to clarify the meaning so it is not interpreted as a single means claim. Iwasaki discloses an optical element comprising a convex lens type enclosure I and a transparent liquid 2, wherein the convex lens-type enclosure I is made up of the transparent fixing plate 11 and the elastic transparent plastic plate 12. There is no member for covering the elastic transparent plastic plate 12 near the elastic transparent plastic plate 12. This is different from claim 10, as clarified. Therefore, Applicant respectfully requests that the rejection of claim 10 under 35 U.S.C. § 102(b) as being anticipated by Iwasaki be withdrawn.

Claim 11 depends from claim 10, and is thus patentable for at least the reasons noted above in regard to claim 10.

Applicant amended claim 16 to clarify the intended meaning. The amendments to claim 16 are fully supported by the original disclosure. For example, the Examiner's attention is directed to Figure 24 and the related discussion at page 54 of the specification. In contrast, Iwasaki discloses an optical element comprising a convex lens type enclosure I and a transparent liquid 2, wherein the convex lens type enclosure I is made up of the transparent fixing plate 11 in the elastic transparent plastic plate 12. It is the elastic transparent plastic plate 12 that is deformed. Nothing is provided in a space that faces the elastic transparent plastic plate 12. Therefore, Applicant respectfully submits that claim 16, as amended, is now in condition for allowance and requests that the rejection under 35 U.S.C. § 102(b) be withdrawn.

Applicant amended claim 17 to clarify the intended meaning. The amendments to claim 17 are fully supported by the original disclosure. For example, the Examiner's attention is directed to Figure 54 and related discussion at page 54 in the specification. Claim 17 is distinguished from Iwasaki for similar reasons as noted above with regard to claim 16. In particular, note that nothing is provided in the space that faces the elastic transparent plastic plate 12 of Iwasaki. Therefore, Applicant respectfully submits that claim 17, as amended, is now in condition for allowance and requests that the rejection under 35 U.S.C. § 102(b) be withdrawn.

The Examiner rejected claims 1-6, 10, 11, 16, 17 and 19 under 35 U.S.C. § 102(b) as being anticipated by Michelet (U.S. Patent No. 4,289,379). Applicant respectfully submits that this rejection has been obviated for at least the following reasons.

Applicant amended claim 1 to remove the term “an electric field”. Michelet discloses arrangements using bimorph structure elements 6, 7 (Figure 1); 19, 20 (Figure 2); 27, 28 (Figure 3); 34, 35, 40 (Figure 4); 50 (Figure 5); 52 (Figure 6); and 61 (Figure 7). All these arrangements disclosed in Michelet use the piezoelectric effect. The surface of each bimorph structure element upon contact with the index adapting medium 13, 24, 43, 58 changes; however, there is no change in the presence of a fluid on the contact surface due to the presence of the expansion chamber 14, 25, 33, 56. Consequently, Michelet makes sole use of the piezoelectric effect. Therefore, Applicant respectfully submits that claim 1 is in condition for allowance and requests that the rejection under 35 U.S.C. § 102(b) as being anticipated by Michelet be withdrawn. Applicant respectfully submits that claims 2-4 are patentable over Michelet for at least the reasons noted above in regard to claim 1.

Applicant amended claim 5 to clarify the intended meaning to ensure that it is not interpreted as a single means claim, as noted above in regard to the Section 112, first paragraph rejection. The amendments to claim 5 are fully supported by the original disclosure. For example, the Examiner’s attention is directed to Figures 3 and Figure 8, and the related discussion in the specification. In contrast, Michelet does not disclose a “booster member.” Therefore, Applicant respectfully submits that claim 5 is in condition for allowance and requests that the rejection under 35 U.S.C. § 102(b) be withdrawn. Claim 6 depends from claim 5 and thus should be allowable for at least the reasons noted above in regard to claim 5.

Applicant amended claim 10 as noted above to clarify the intended meaning so that it is not interpreted as a single means claim. In contrast, Michelet discloses an arrangement comprising the piezoelectric bimorph structures 53 and 54, wherein the bimorph 53 includes the reflecting material 59. On the other hand, the bimorph structure 53 and the reflecting material 59 form together a mirror having a variable focal length. There is no member for covering the bimorph structure 53 and reflecting material 59. The window 62 is located on the opposite side of the bimorph 53 and reflecting mirror 59. The window 62 does not entirely cover the element or layer 60, and does not entirely cover the bimorph structure 53

and reflecting material 59. Therefore, Applicant respectfully submits that claim 10 is in condition for allowance and requests that the rejection under 35 U.S.C. § 102(b) as being anticipated by Michelet be withdrawn. Since claim 11 depends from claim 10, Applicant respectfully submits that it is in condition for allowance for at least the reasons noted above in regard to claim 10.

As noted above, Applicant amended claim 16 to clarify the intended meaning. In contrast, Michelet discloses the container 1 comprising the wall 2 and the wall 3, wherein the deformable wall 2 has the bimorph structure elements 6, 7 (see Figure 1). Nothing is in a space that faces the wall 2. Therefore, Applicant respectfully submits that claim 16 is patentable over Michelet, and requests that the rejection be withdrawn. Furthermore, Applicant respectfully submits that claim 17 is patentable over Michelet for similar reasons as in claim 16. Since claim 19 depends from claim 16 or 17, Applicants respectfully submit that it is patentable over Michelet for at least the reasons noted above in regard to claims 16 or 17.

The Examiner rejected claim 8 under 35 U.S.C. § 102(b) as being anticipated by Colbourne et al. (U.S. Patent No. 5,915,063). Applicant respectfully traverses for at least the following reasons.

Applicant amended claim 8 to clarify the intended meaning so that it is not interpreted as a single means claim. In contrast, Colbourne et al. disclose an arrangement comprising the planar mirror 10, rigid bridge portion 13, and piezoelectric members 18 and 19, wherein the piezoelectric member 18, 19 is a magnetostrictive or electrostrictive member. Application of different voltages to the piezoelectric members 18, 19, causes a tilt of the planar mirror 10, yet its surface shape stays planar. Therefore, Applicant respectfully submits that claim 8, as amended, is now in condition for allowance and requests that the rejection under 35 U.S.C. § 102(b) based on Colbourne et al. be withdrawn.

The Examiner rejected claims 1, 3-7 and 9 under 35 U.S.C. § 102(b) as being anticipated by Schachar (U.S. Patent No. 5,774,274). Applicant respectfully traverses for at least the following reasons.

In regard to claim 1, note that Schachar shows that a piezoelectric material driven by an electric voltage, a magnetostrictive ring driven by a magnetic field, a bimetallic ring

changing with heat, or a shape memory alloy transforming with a specific transition temperature is used as the equatorial ring. However, Schachar does not teach or suggest using two of such structures in combination. Therefore, Applicant respectfully submits that claim 1 is in condition for allowance. Applicant respectfully submits that claims 3 and 4 are patentable over Schachar for reasons similar to that of claim 1. In regard to claim 5, Schachar fails to disclose the “booster member.” Therefore, Applicant respectfully submits that claim 5 is patentable over Schachar. Since claim 6 depends from claim 5, Applicant respectfully submits that it is patentable over Schachar for at least the reasons noted above in regard to claim 5. In regard to claims 7 and 9, as amended to overcome the Section 112 rejection, note that Schachar discloses the elastically deformable lens 402. The elastically deformable lens 402 is made of a transparent bladder (water 112, wall 114). (See, column 7, line 55 of Schachar.) However, Schachar neither teaches nor suggests that the transparent bladder is a magnetostrictive material. Therefore, Applicant respectfully submits that claims 7 and 9 are patentable over Schachar and requests that the rejection under 35 U.S.C. § 102(b) be withdrawn.

The Examiner rejected claim 13 under 35 U.S.C. § 102(b) as being anticipated by Hager et al. (U.S. Patent No. 4,494,003). Applicant amended claim 13 to overcome the Section 112, first paragraph, rejection as noted above. The amendment to claim 13 is fully supported by the specification. For example, the Examiner’s attention is directed to Figure 29 and page 56 of the specification. In contrast, Hager et al. discloses a lens array that is made up of glass lenses having variable lens thicknesses wherein each glass lens contains manganese. Gamma radiation causes the color of each glass lens to change. However, Hager et al. fail to disclose a change of the optical surface due to the photomechanical effect. Therefore, Applicant respectfully submits that claim 13 is patentable over Hager et al. and requests that the rejection under 35 U.S.C. § 102(b) be withdrawn.

The Examiner rejected claims 1, 2, 4, 12 and 14 under 35 U.S.C. § 102(b) as being anticipated by Kuzyk et al. (U.S. Patent No. 5,682,447). Applicant respectfully traverses for at least the following reasons. Kuzyk et al. discloses the movable mirror 36 and optical fiber 52. It teaches that the photomechanical effect is used to position and stabilize the moving object. It further teaches at column 12, lines 18-28 that as light passes through the optical fiber 52, there is a photothermal heating, which in turn causes a change in the length of the optical fiber 52 and teaches that with the change in the length of the optical fiber 52, the

position of the movable mirror 36 changes. Kuzyk et al. does not teach photomechanical effects and photothermal heating that are independent from each other and thus discloses the use of only one of these. Applicant thus respectfully submits that claim 1 is in condition for allowance and requests that the rejection based on Kuzyk et al. be withdrawn. Applicant respectfully submits that claims 2 and 4 are patentable over Kuzyk et al. for reasons similar to those noted above in regard to claim 1.

In regard to claim 12, note that Kuzyk et al. disclose the movable mirror 36 and optical fiber 52 in which the photomechanical effect is used to position and stabilize the moving object. As light passes through the optical fiber 52, there is a photothermal heating which in turn causes a change in the length of the optical fiber 52 (column 12, line 18-28). With the change in length of the optical fiber 52, the position of the movable mirror 36 changes. Therefore, the movable mirror 36 changes in position, but the optical surface remains invariable. As noted above in regard to claim 1, the photomechanical effect is due to the photothermal heating. Kuzyk et al. thus do not teach one to deform the optical surface of the movable mirror 36 by the photomechanical effect and does not disclose that the optical surface is deformed. The optical fiber 52 merely varies in length by the photomechanical effect. Therefore, Applicant respectfully submits that claim 12, as amended, is patentable over Kuzyk et al. and requests that the rejection be withdrawn. In regard to claim 14, Kuzyk et al. does not show the change of the optical surface by the photomechanical effect. It merely discloses a change in the position of the movable mirror 36. Therefore, Applicant respectfully submits that claim 14 is patentable over Kuzyk et al. and requests that the rejection be withdrawn.

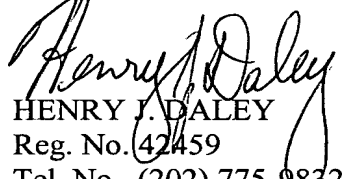
The Examiner rejected claims 16, 18 and 20 under 35 U.S.C. § 102(b) as being anticipated by Miles (U.S. Patent No. 6,055,090). Miles discloses the pixels 200 and 202. The pixels 200 are being driven, while the pixels 202 are not driven, and the reflector 208 undergoes deformation. When not driven, a space opposite to the reflector 208, between the reflector 208 and the induced absorber 206, is not closed. When driven, the reflector 208 is in contact with the induced absorber 206. In this case, the space opposite the reflector 208 will then be closed up by the induced absorber 206 alone. In other words, closure is only provided by either the transparent member or the mechanical member. Therefore, Applicant respectfully submits that claim 16 is patentable over Miles and requests that the rejection be withdrawn. Furthermore, claims 18 and 20 each contains all the limitations of claim 16, and

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thus Applicant respectfully submits that they are also patentable over Miles and requests that the rejection be withdrawn.

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Respectfully submitted,
PILLSBURY WINTHROP LLP


HENRY J. DALEY
Reg. No. 42459
Tel. No. (202) 775-9832
Fax No. 703 905-2500

Date: August 11, 2004
P.O. Box 10500
McLean, VA 22102
(703) 905-2000